REMARKS

Claims 1, 4-6, 8-10 and 15 remain pending in the application. Claims 1, 10 and 15 are amended herein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 4, 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takizawa et al. (U.S. Pat. No. 6,357,849) in view of Yoshiyama et al. (U.S. Pat. Pub. No. 2002/0140750) and further in view of Culpovich et al. (U.S. Pat. No. 6,551,521). This rejection is respectfully traversed.

The device manufacturing apparatus according to independent claim 1 of the present application includes a feature that "said controller performs calibration of said receiver **immediately** before execution of a nozzle detection operation, ***said calibration including resetting of a gain data at present of said receiver***".

Similarly, the device manufacturing method according to independent claim 10 of the present application includes a feature that "calibration of said receiver is performed **immediately** before execution of a nozzle detection operation, ***said calibration including resetting of a gain data at present of said receiver***".

Support for the amendments to claims 1 and 10 (and 15) can be found at least at page 5, line 21 to page 6, line 4, in the original specification wherein it states: "For the timing for performing the calibration, preferably this is performed **immediately before the detection operation**. By so doing, when performing a detection operation of non-performing nozzles a plurality of times, there are cases where the receiving sensitivity of

the receiver, or the output signal value become different for each of the non-performing nozzle detections due for example to the temperature (heat) of the receiver, or to noise attributable to the surrounding equipment (noise generating sources). However, by performing calibration of the receiver before each execution of the non-performing nozzle detection operation, the detection accuracy of the receiver can be improved." Accordingly, no new matter is added.

Therefore, the present invention according to independent claims 1 and 10 (and claim 15) includes the feature that **the receiver is calibrated immediately before the nozzle detection operation**. Independent claims 1 and 10 (as well as claim 15) also include the feature that ***the calibration includes resetting of a gain data at present of said receiver***. With this feature, the claimed invention enables calibrating the receiver **immediately** before execution of the nozzle detection operation, while considering the influences on the sensitivity or the like of the receiver, noise of equipment (noise generating sources) near the receiver, or the temperature (heat) of the receiver itself. Since **the receiver is calibrated immediately before the nozzle detection operation,** it is possible to perform a calibration of the receiver considering **the current condition** of the receiver and **the current influences** of the circumstances surrounding the sensor, on the receiver.

In contrast, the device and the method disclosed in Yoshiyama et al. cannot perform a calibration of the receiver considering the current condition of the receiver and the current influences of the circumstances on the receiver. That is, Yoshiyama et al. clearly discloses in the ABSTRACT that "An actual detecting position P1 is found based on the level of reflected light. The difference between the theoretical detecting

position P2 and the actual detecting position P1 is calculated and *is stored as the calibration value α in a first calibration data memory M1*. Accordingly, the actual detecting position P1 is set as P2±α. *The calibration value α is used in a calibration process to calibrate the detecting position*, so that the level of reflected light can be detected with accuracy". That is, since the calibration process of Yoshiyama et al. uses the calibration value α which was obtained in advance to perform the calibration process (that is, prior to running the image forming device), the calibration value α cannot consider ***the current condition*** of the sensor (receiver) and ***the current influences*** of the circumstances surrounding the sensor, on the sensor (receiver). That is, the device and the method disclosed in Yoshiyama et al. cannot perform a calibration of the sensor (receive) considering ***the current condition*** of the sensor (receive) and ***the current influences*** of the circumstances surrounding the sensor, on the sensor (receive).

The Office Action now asserts the newly cited reference of Culpovich et al. Applicant respectfully submits, however, that Culpovich et al. is insufficient to cure the above defect of Yamamoto et al. due to at least the following reasons.

Culpovich et al. discloses an automatic etchant regeneration system with a sensor for monitoring etchant composition. The description pointed out by the Examiner of Culpovich et al. in col. 10, lines 49-62 mentions that "the system checks the calibration of the sensors (Step 58). If the calibration of the sensors is okay..., then the system resets, and returns to the first question. If the calibration is not okay..., then the system assumes that an error is present and summons help". This description clearly indicates that this process is not calibrating a sensor, but for selecting necessary

actions (that is, whether resetting the system or informing an error) depending on the result of the calibration.

Furthermore, Culpovich et al. also states that: "As a result, appropriate calibration of the detector need *only be done once or relatively few times in the lifetime of the sensor*" (refer to column 7, lines 28 to 30); and "the photodetector offers improved accuracy and *need only be calibrated once or relatively few times in the lifetime of the sensor*" (refer to column 7, lines 48 to 50). These descriptions clearly indicate that the sensor in the system almost never needs calibrations; and furthermore, Culpovich et al. is silent about the influences on the sensor of heat generated by the sensor and noise surrounding the sensor. Therefore, Culpovich et al. cannot provide any motivation to achieve the above-mentioned advantageous effect (i.e., "performing the calibration of the receiver considering ***the current condition*** of the receiver and ***the current influences*** of the circumstances surrounding the receiver, on the receiver").

As explained in the above, the present invention according to independent claims 1 and 10 (as well as 15) includes the above-mentioned features which are neither disclosed nor suggested in Takizawa et al., Yoshiyama et al., Culpovich et al., Bruch et al., Hah or Cleary et al., which results in the above-mentioned technical advantageous effects. Accordingly, the Applicant submits that independent claims 1 and 10 are allowable.

Claims 4 and 9 depend from claim 1 and should be allowable for at least the same reasons as set forth above.

Claims 5 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takizawa et al. (U.S. Pat. No. 6,357,849) in view of Yoshiyama et al. (U.S. Pat. Pub. No. 2002/0140750) and Culpovich et al. (U.S. Pat. No. 6,551,521) and further in view of Bruch et al. (U.S. Pat. No. 6,814,422). This rejection is respectfully traversed. Claims 5 and 8 depend from claim 1 and should be allowable for at least the same reasons as set forth above.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Takizawa et al. (U.S. Pat. No. 6,357,849) in view of Yoshiyama et al. (U.S. Pat. Pub. No. 2002/0140750) and Culpovich et al. (U.S. Pat. No. 6,551,521) and further in view of Hah (U.S. Patent No. 6,371,590). This rejection is respectfully traversed. Claim 6 depends from claim 1 and should be allowable for at least the same reasons as set forth above.

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Takizawa et al. (U.S. Pat. No. 6,357,849) in view of Yoshiyama et al. (U.S. Pat. Pub. No. 2002/0140750) and further in view of Cleary et al. (U.S. Pat. Pub. No. 2002/0149660). This rejection is respectfully traversed.

As with claims 1 and 10, the device manufacturing method according to independent claim 15 of the present application includes a feature that "calibration of said receiver is performed **immediately** before execution of a nozzle detection operation, ***said calibration including resetting of a gain data at present of said receiver***. The arguments set forth above with respect to claims 1 and 10 are equally applicable with respect to claim 15. Thus, reconsideration and withdrawal of the rejection of claim 15 are respectfully requested on the basis set forth above.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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